



AER Public Forum **Country Energy's** **Regulatory Proposal 2009 to 2014**

Sydney, 30 July 2008



We live here too.

Introduction

Craig Murray, Managing Director

Country Energy



One of Australia's largest regional businesses

A decentralised regional management structure, with around 4,200 employees and 770,000 network customers in nine regions

Operating Australia's largest electricity network
Around 200,000 kilometres of powerlines and 1.4 million power poles across urban, coastal, mountain, tableland and outback environments



Investing in customer service and communities

Created more than 700 new apprenticeships since 2001, and the largest direct employer of Indigenous apprentices in New South Wales

Our key objectives



Country Energy's statutory objectives include

- *To be a successful business and, to this end*
 - *Operate at least as efficiently as any comparable business*
 - *Maximise the net worth of the State's investment in it*
 - *Exhibit a sense of social responsibility by having regard to the interests of the community in which it operates*
- *Protect the environment by conducting its operations in compliance with section 6 (2) of the Protection of the Environment Administration Act 1991*
- *Exhibit a sense of responsibility towards regional development and decentralisation*
- *Operate efficient, safe and reliable facilities for the distribution of electricity and other forms of energy*
- *Be an efficient and responsible supplier of electricity and other forms of energy and of services relating to the use and conservation of electricity and other forms of energy*

These objectives are of equal importance and underpin our overall purpose

Our key challenges



- Customer expectations and compliance requirements
 - **Safety** of our employees and the public – legislation, industry codes, duty of care
 - **Reliability** of essential services – NSW *Network Design Reliability and Performance Licence Conditions* codify acceptable network customer service standards
 - **Environmental** protection – legislation, planning and assessment, responsibility
- Customer and employee demographics
 - **Growth** in customer numbers is strong and consumption patterns are changing – in general the coast and major regional centres are showing increasing peak demand
 - **Workforce** demographic change – 20 per cent of our meter readers will reach typical retirement age next year
- Efficiency and productivity
 - **Cost of living** pressures – need to provide a satisfactory level of service at an efficient cost
 - **Skills** and development – competition to attract and retain qualified employees, and provide secure and satisfying careers

Country Energy's strategy



Our strategy for 2008-2009:

Be Australia's best essential services provider.

countryenergy

We live here too.

Our priorities, objectives and targets for 2008-2009:

Safety

Drive to zero harm



Leader in Safety

Lost Time Injuries (LTIs)	18 and decreasing
Lost Time Injury Severity Rate (LTISR)	15 days and decreasing
Safety Audits	96 per cent

Service

Providing excellent service

Promoted in Communities

Customer Promoter Score	Greater than 25
Stakeholder Promoter Score	Greater than 25

Successful Service Provider

Customer First Contact Completion	96 per cent
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Essential Services Provider

SAIDI	Less than 332 minutes per customer
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Value

Strong business outcomes

Efficient Business Operator

Operational Excellence Program	Implemented
Planned Outage Performance	Customer expectations met

Innovative Network Operator

Adherence to Distribution Asset Management Plan	100 per cent
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Responsible Financial Manager

Earnings Before Interest and Tax (EBIT)	Greater than \$298 million
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Sustainability

People and environment

Resourceful, Rewarded People

Leave Management Program	Improved
Unscheduled Sick Leave	Improved
Workforce Planning	Implemented

An Environmental Leader

Carbon Reduction Program	Implemented
Environmental Compliance	96 per cent

Safety
Service
Value
Sustainability

Our four key objectives for the next five years

Our values are • Safety • Accountability • Fun • Excellence • Teamwork • Yes, we'll do it.



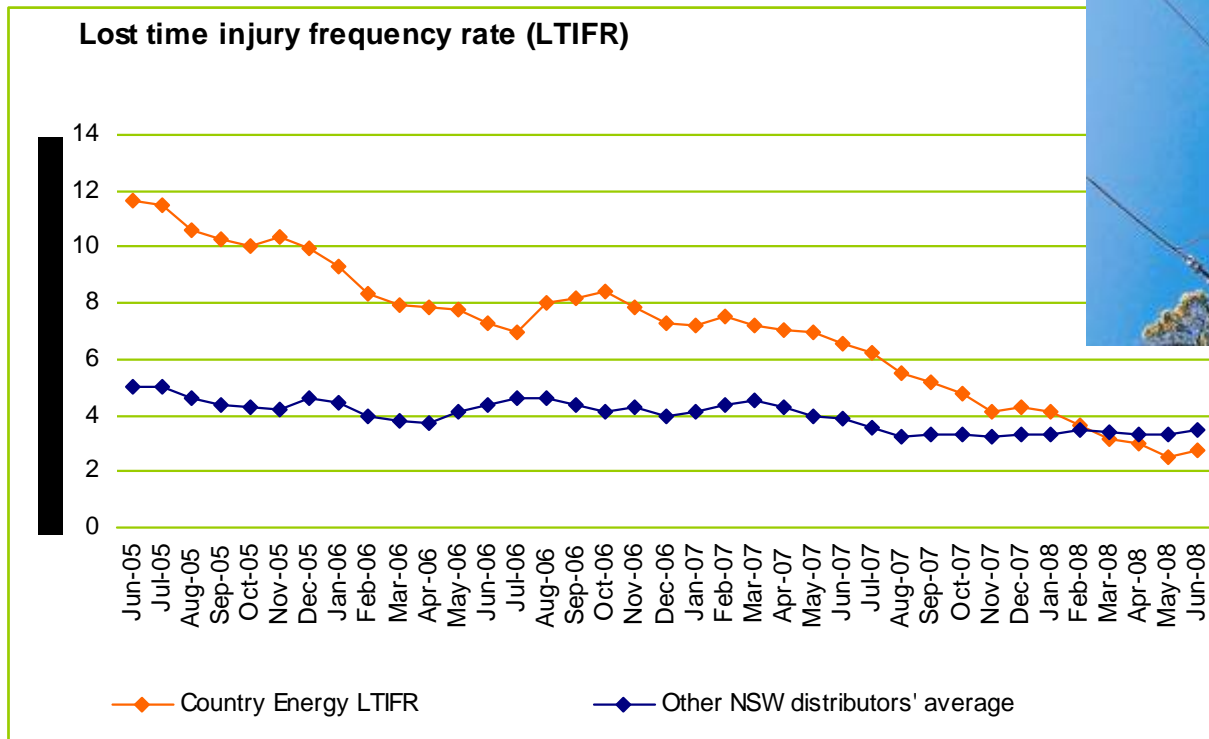
Country Energy is finding better ways to deliver essential services, because we live here too.

Safety



Safety of the public and our employees

- We have reduced our Lost Time Injury Frequency Rate substantially, and continue to improve and enhance our safety management



- The challenge of 'driving to zero harm' remains our first priority

Service



Service for customers

- A decentralised regional management structure, of 142 regional offices and service centres
- A dedicated ‘Supply Interruption Group’ call centre providing 24 hour 7 day emergency response – and three regional contact centres
- Together, these services mean we
 - provide fast response to network issues
 - are quick to resolve customer concerns
 - and are responsive to local priorities

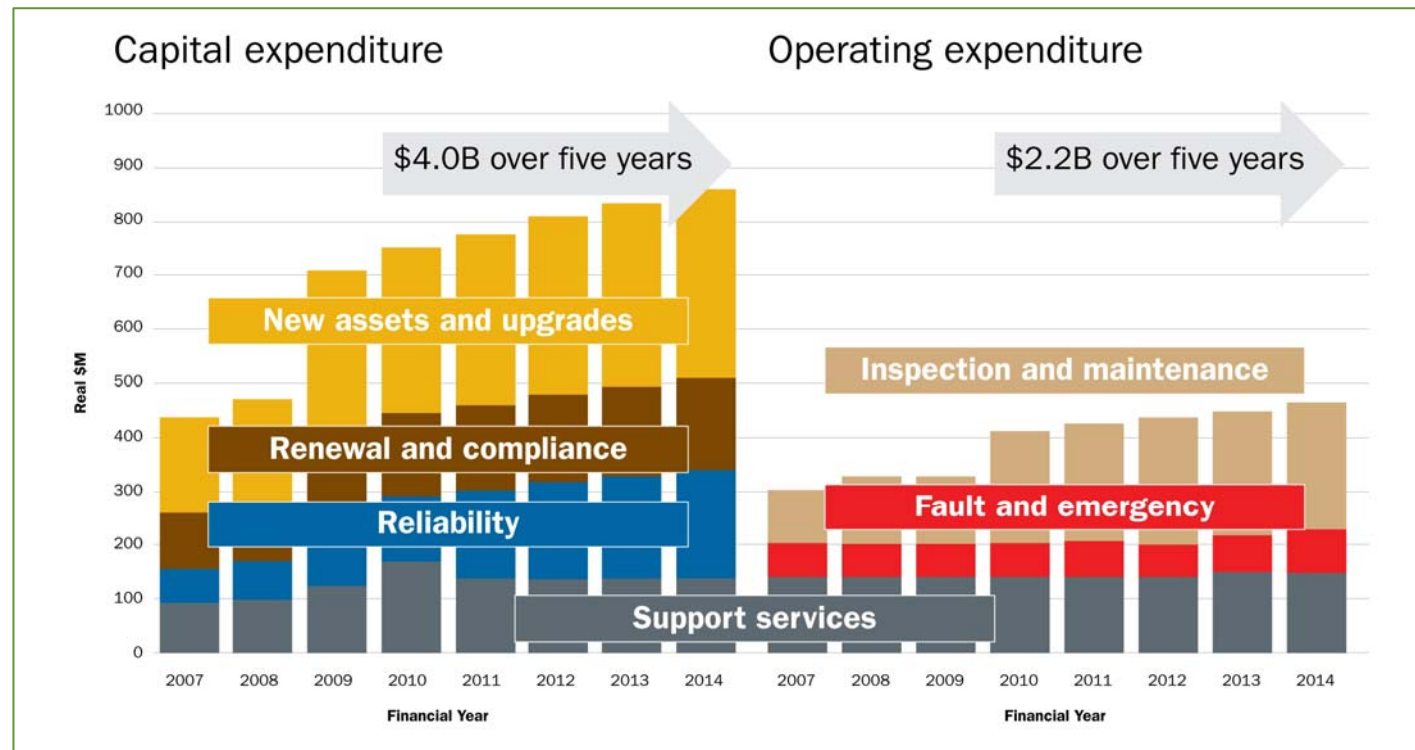


Value – and our expenditure proposal

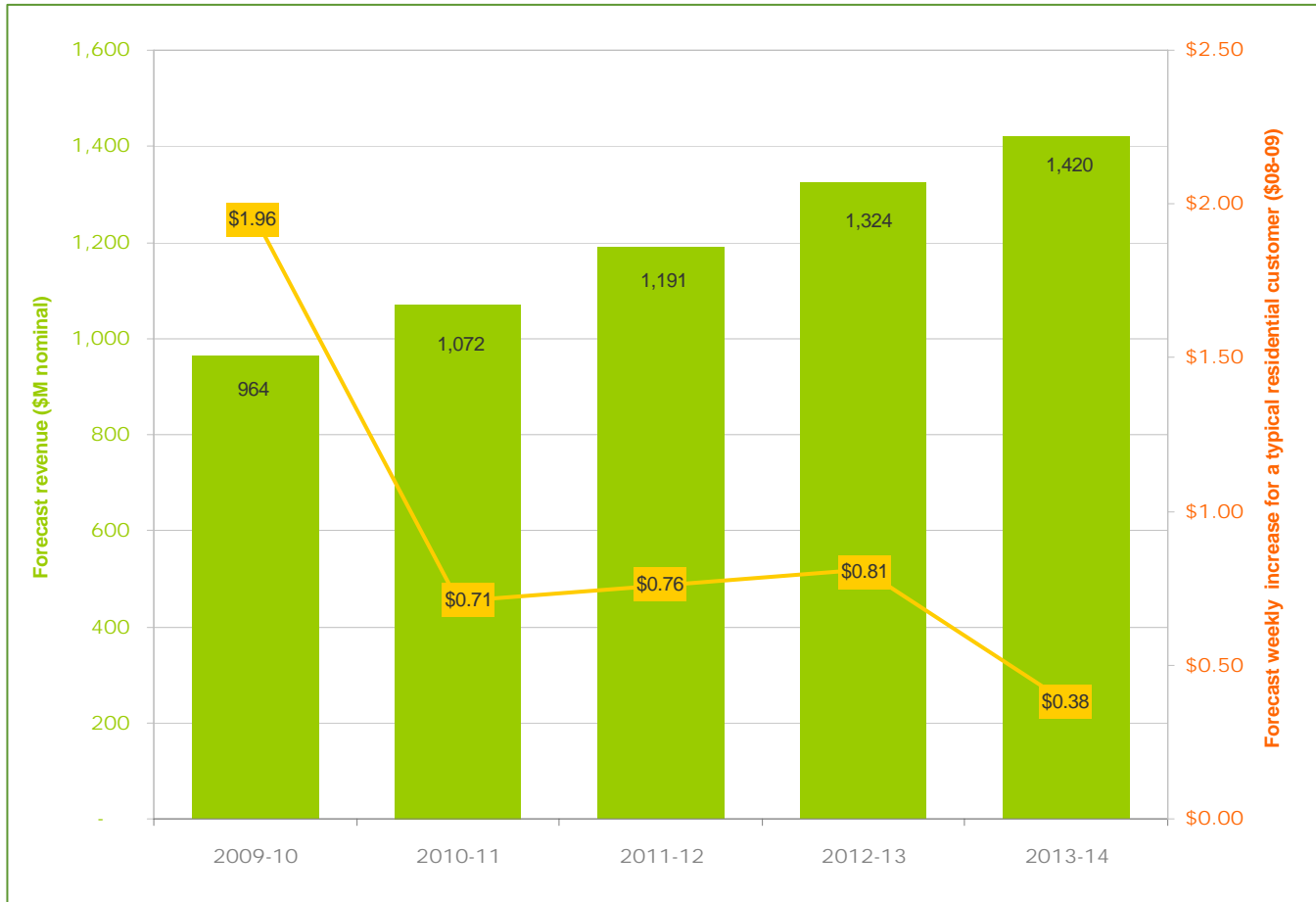


Value for money

- Meeting customers' service expectations
- Achieving business returns that fully recognise business costs
- Realising productivity improvements



Value – and our revenue proposal



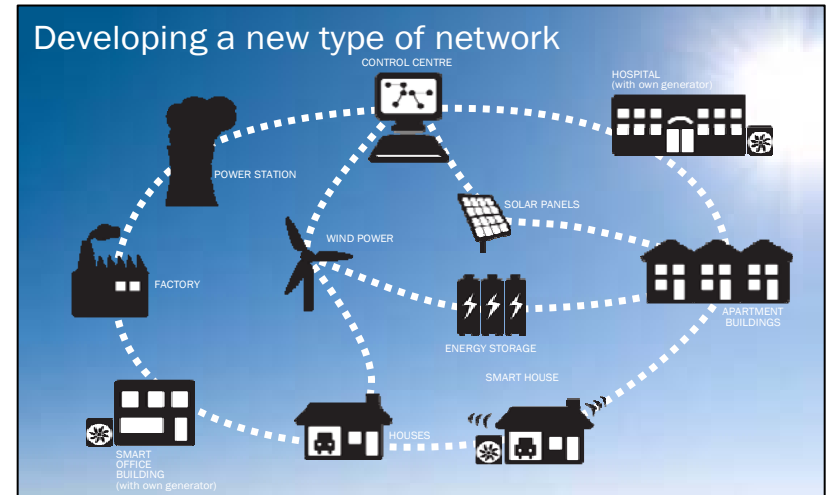
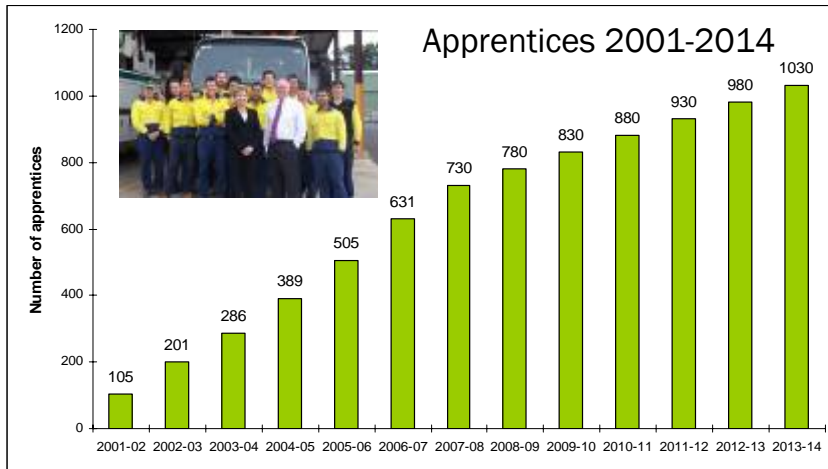
More than one quarter of the forecast first year price change is a direct result of increases in the cost of labour and materials, and necessary additional works, over the last five years

Sustainability



A sustainable workforce requires –

- effective recruitment strategies
- effective retirement strategies
- development and mentoring programs
- greater workplace diversity



A sustainable environment requires –

- minimisation of environmental impacts
- rigorous planning and assessment
- consideration of network alternatives
- development of a more 'intelligent network' building on smart metering

Our proposal summary



Country Energy's regulatory proposal is designed to deliver a safe and efficient electricity network service through

- a responsive investment program matched to growing populations and changing consumption patterns
- a cost reflective maintenance and refurbishment program aiming to maintain 'end to end' asset condition – from major substations to home service mains and meters
- updated skills, tools and technological capability to resource these tasks, and realise productivity gains

Country Energy believes that its proposals can deliver a reliable, affordable and sustainable electricity network service for customers

Network proposals

Ken Stonestreet, Group General Manager Networks and Infrastructure

Australia's largest power network



Almost 200,000 kilometres of powerlines and 1.4 million poles

- vast majority of network is 'overhead'
- 130,000 distribution and 330 zone substations ranging in capacity from 2.5 kVA to 180 MVA
- diverse asset types, three phase, single phase, SWER, operating at 240 to 132,000 Volt
- some customers supplied by > 400 km of line from nearest zone substation
- longest feeder > 1,800 km

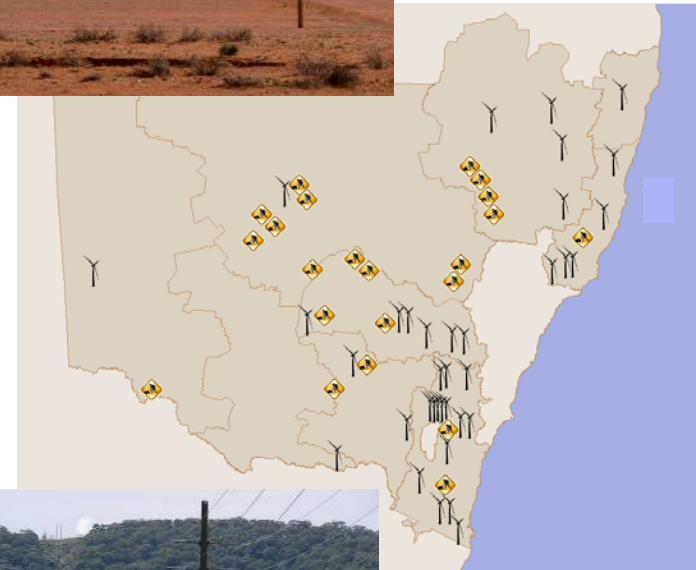


Estimated total replacement cost ~ \$14 billion

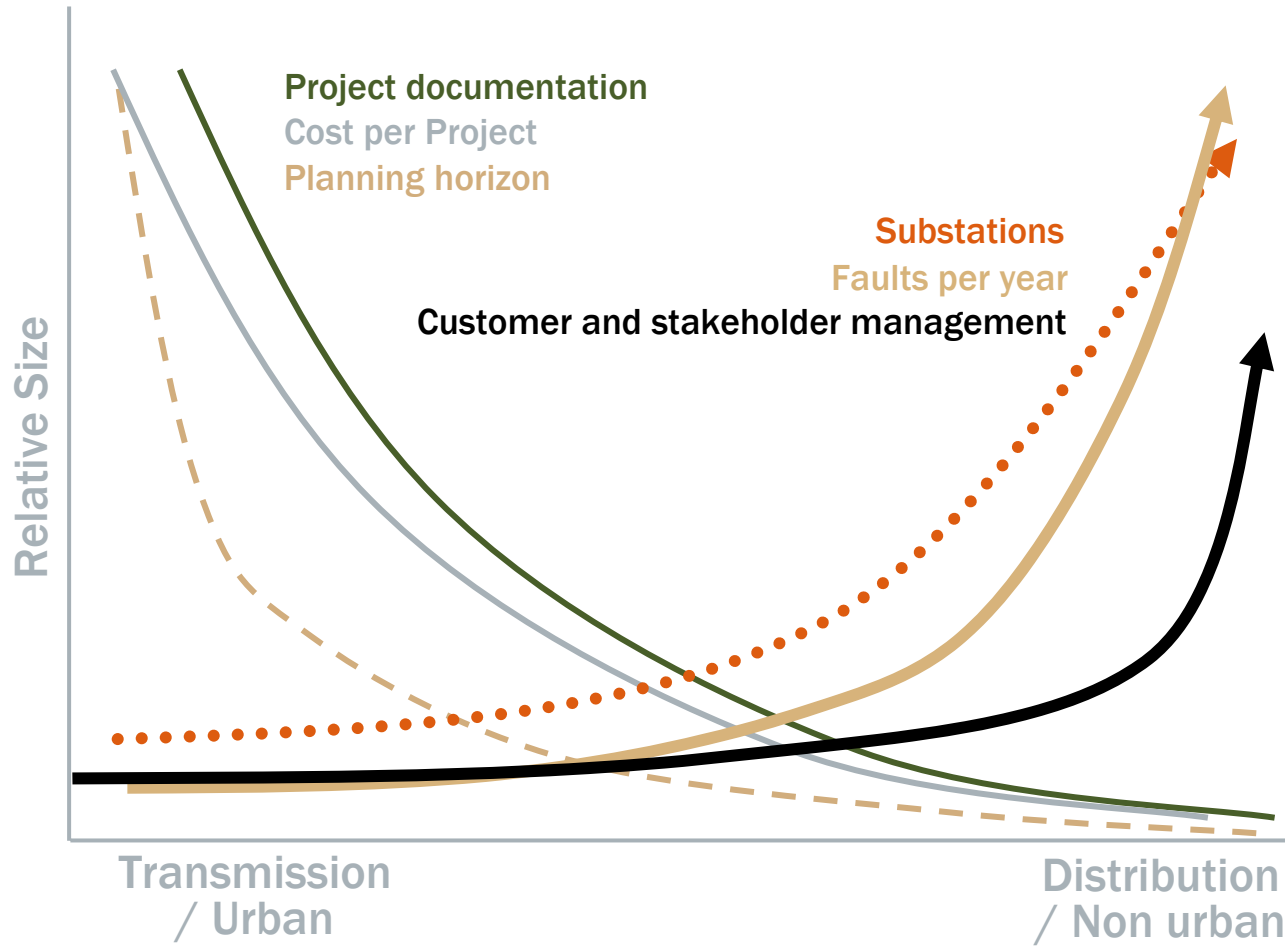
A unique power network



- Extremes of terrain and climate
 - plains, subtropics, snowfields and deserts
 - high degree of exposure to elements
- Extremes of customer densities
 - medium to high density urban
 - sparse rural
 - large ‘spot loads’ – mines and wind farms (map shows proposed new connection applications)
- An ageing network
 - 50 per cent of overhead powerlines are more than 40 years old
 - some network components are more than 70 years
 - weighted average age ~ 30 years



A distinct class of network



Key network challenges



Country Energy has identified five key network challenges –

- ageing asset profiles and varying asset conditions
- growing populations and changing consumption patterns
- increasing reliability, quality and security of supply expectations
- growing safety and environmental responsibilities
- escalating costs of key inputs including labour, materials and fuel



Key network considerations



Our overall network expenditure proposal has been developed with a range of factors in mind –

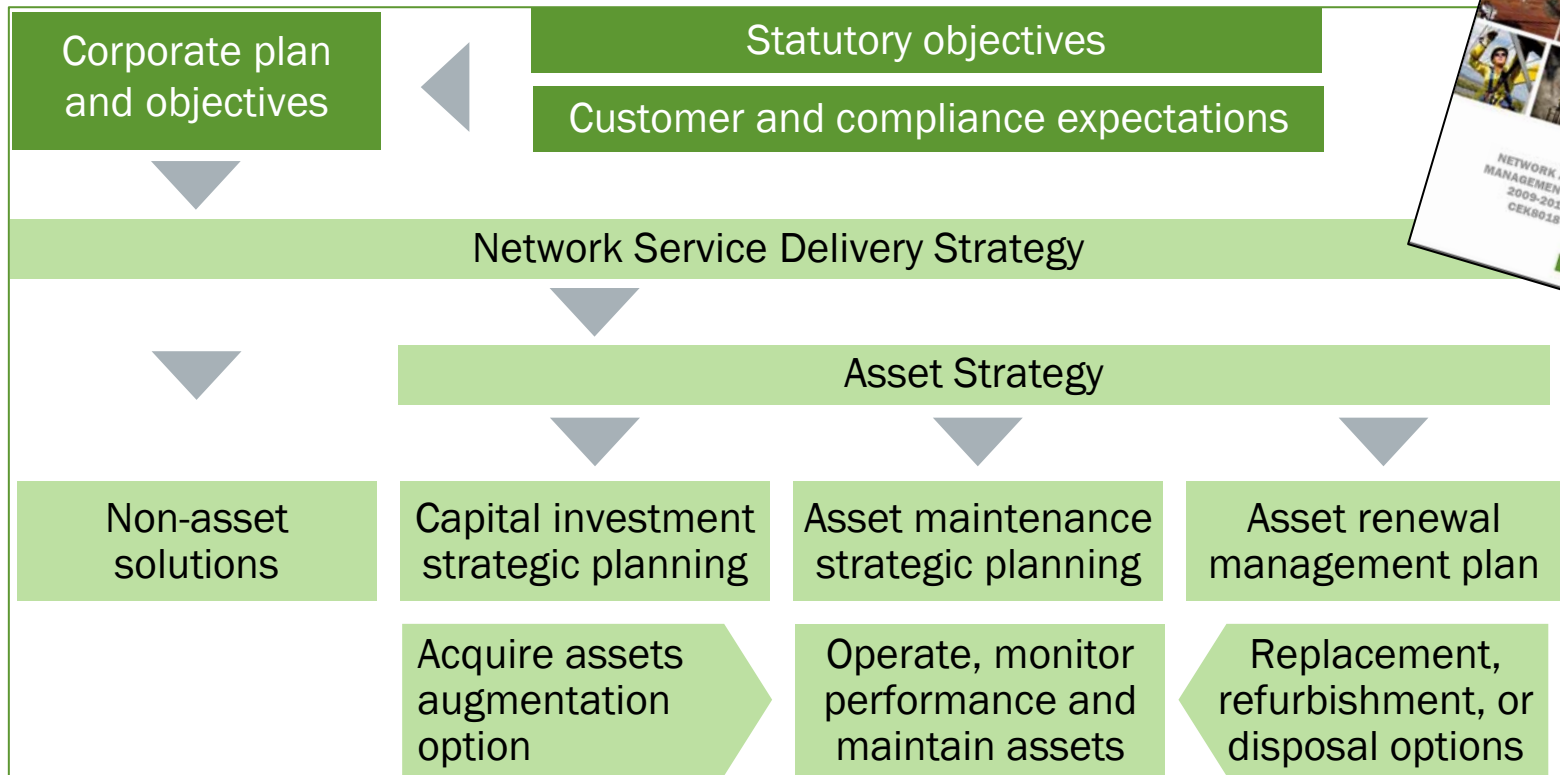
- Past performance trends and customers' expectations
- Regulatory requirements and performance standards – including our network *licence conditions*
- Balance between capital expenditure, operating and maintenance expenditure and demand management opportunities
- Ability to resource our plans
- Efficiency and productivity



Asset management plans



Our *Network Asset Management Plan* Provides a holistic overview of Country Energy's asset management strategies, policies, plans and programs

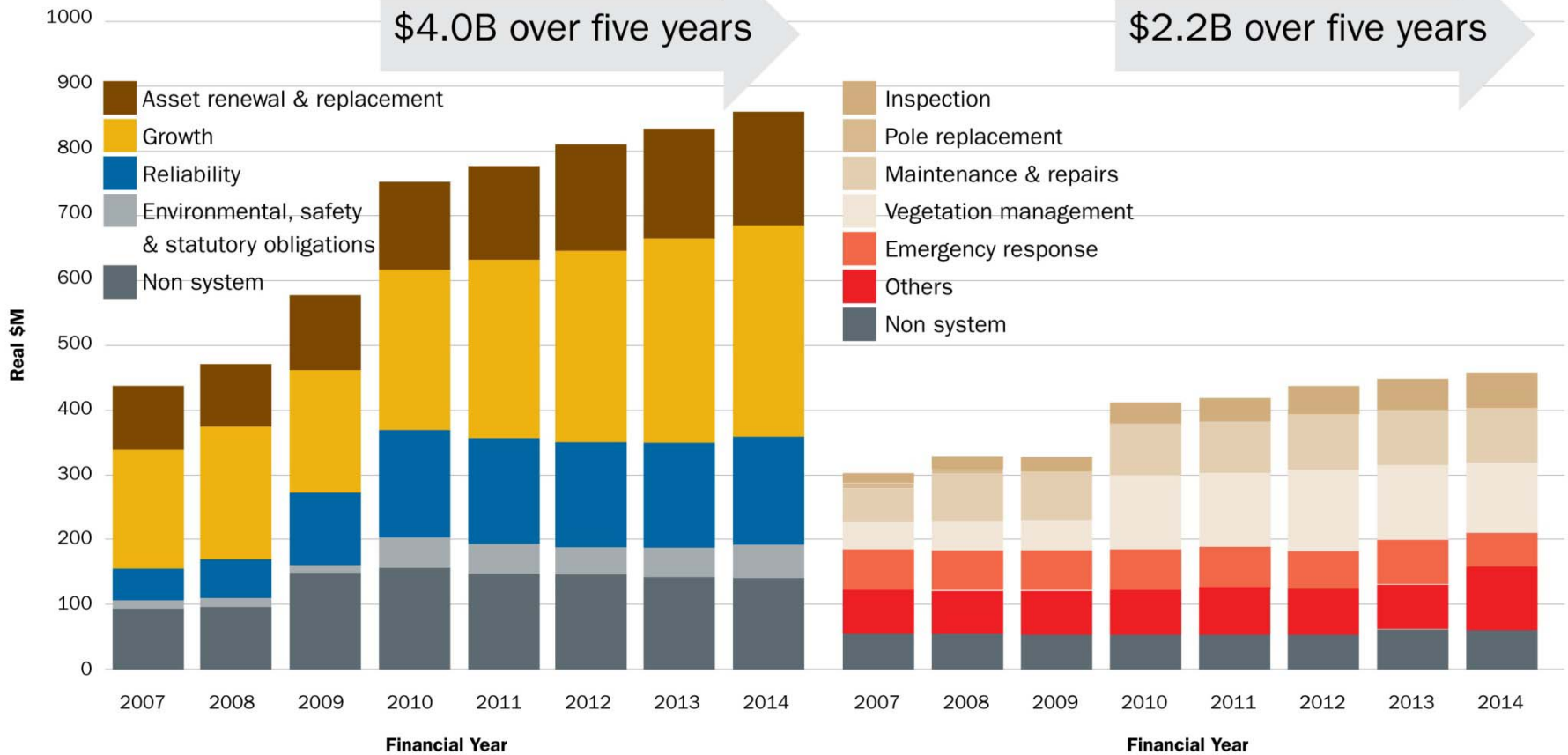


Overall expenditure forecast



Capital expenditure

Operating expenditure

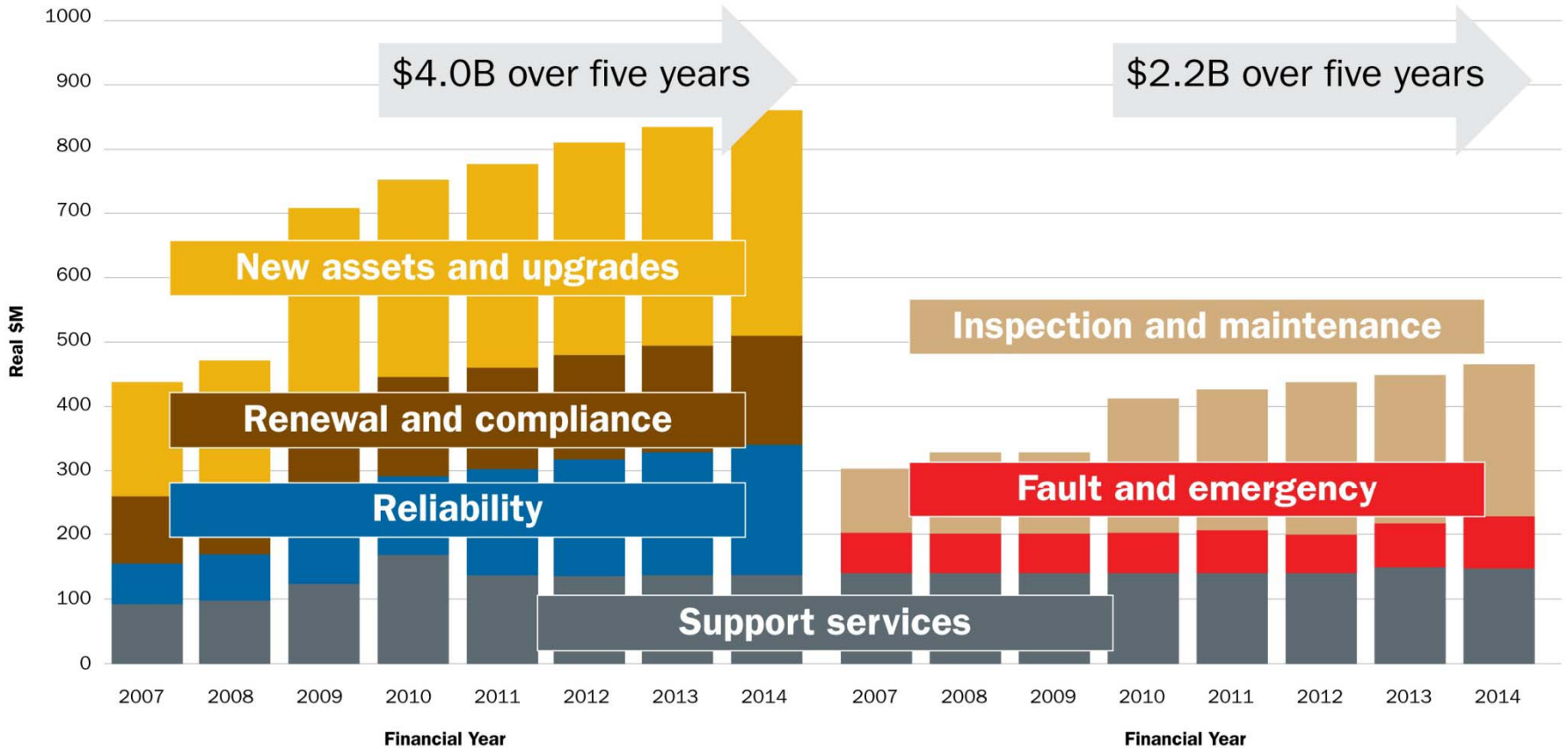


Expenditure forecast by category



Capital expenditure

Operating expenditure



New assets and upgrades

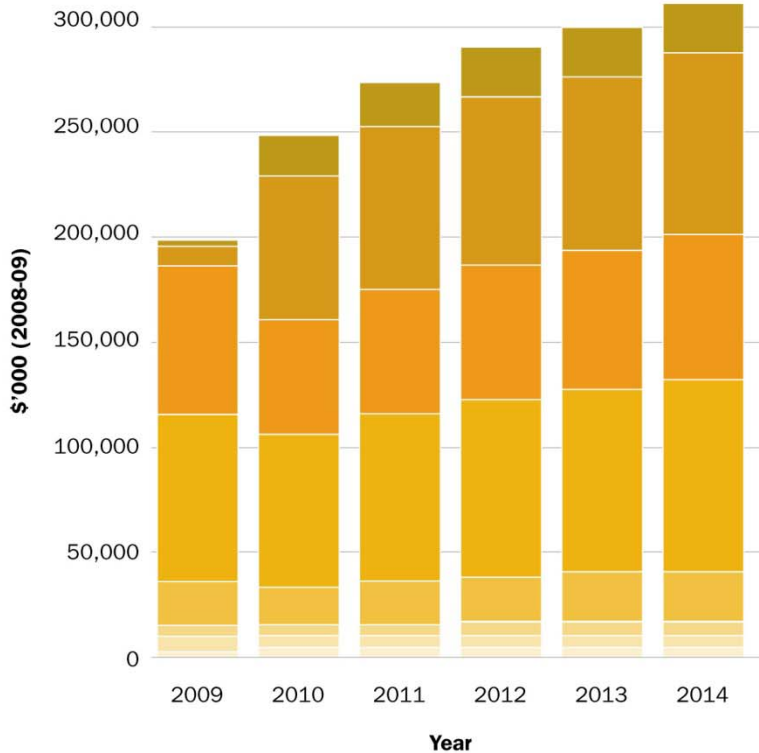
New assets and upgrades



- Expenditure to ensure
 - Adequate network capacity
 - Ratings of equipment not exceeded
 - Supply security is maintained
 - Network performance (reliability and quality) is maintained
 - Acceptable ratings and levels of utilisation
- Sub-transmission lines and zone substations
 - Expenditure is driven by peak demand
 - Comprehensive medium term plan
- Distribution assets
 - Expenditure driven by increasing customer base
 - Impacted by increasing energy requirements
 - Expenditure tends to be more consistent and predictable

New assets and upgrades

Categories



Easements

Sub transmission lines and cables

Substations

Distribution lines and cables

Communications

Transformers

Customer metering and load control

Low voltage lines and cables

Land

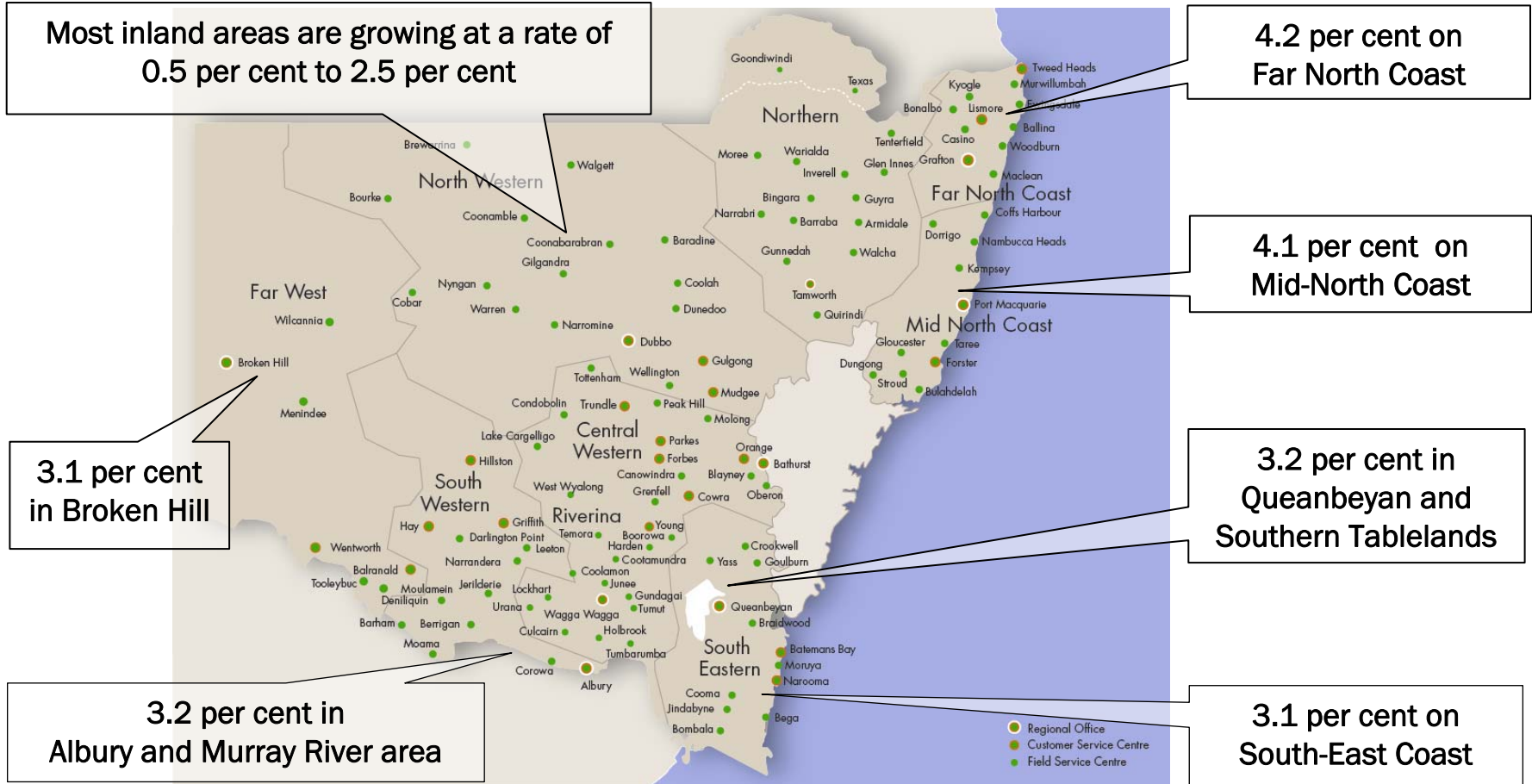
Electricity growth forecasts

2009 - 2014



- Population growth, economic growth and steady residential building activity
 - Electricity consumption to grow by 1.56 per cent per annum
 - New electricity customer connections to grow by 1.46 per cent per annum
- Average annual rate of growth in system-wide summer and winter peak demand is expected to be 3.0 per cent and 1.8 per cent, under medium growth scenario, to 2013-14
 - Adds some 75 MW to summer peak load each year
- Country Energy expects strong rates of demand growth to continue into the immediate future
 - Significant ‘economic’ load growth gradually eroding available capacity

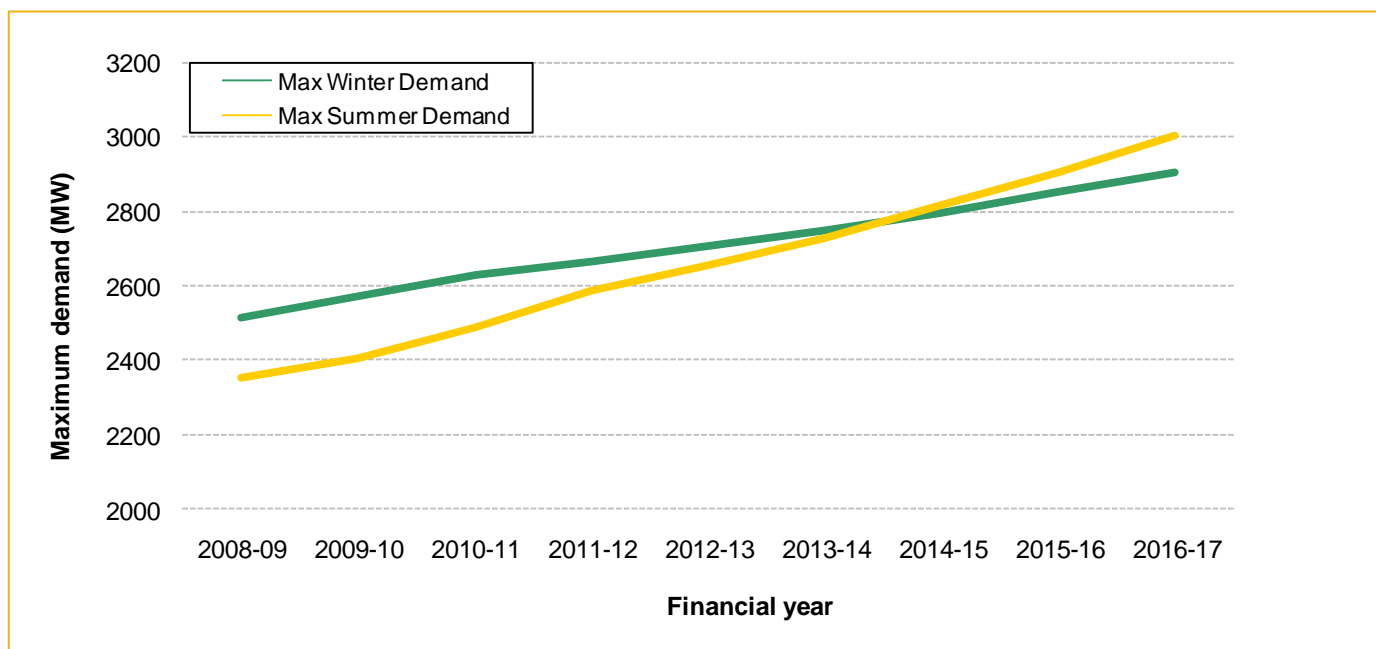
Annual growth in peak demand



Shift to summer peak



- Air conditioning is driving summer peak demand to increase by 3 per cent
- Average annual rate of growth in winter peak demand – 1.8 per cent per annum under base growth scenario

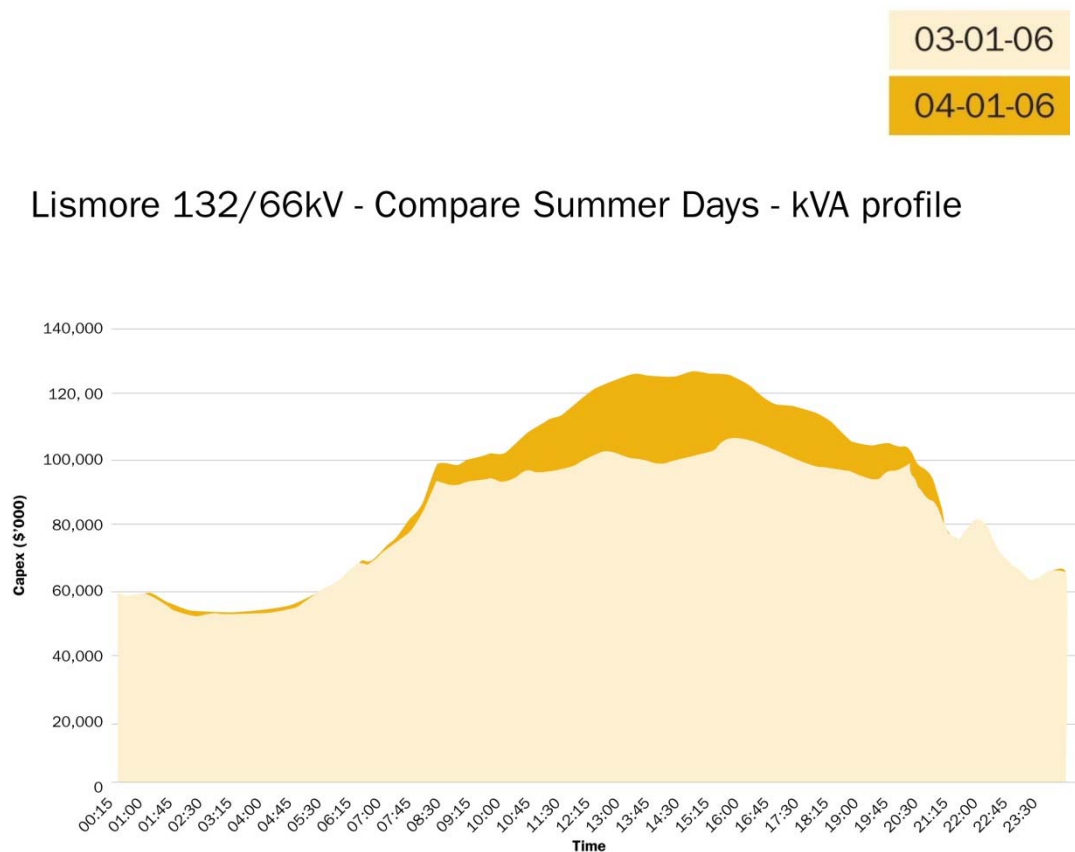


Temperature and loads



- Average change in maximum daily load per °C for summer has increased from 23 MW to 56 MW from 2000-01 to 2006-07
- By 2013-14 total temperature-sensitive load expected to be 51 per cent of total peak summer demand (55 per cent by 2017-18)

Figure shows typical difference between demand curves on a mild 25°C degree summer day and for an extreme 40°C summer day (at Lismore bulk supply point located in NSW far north coast)

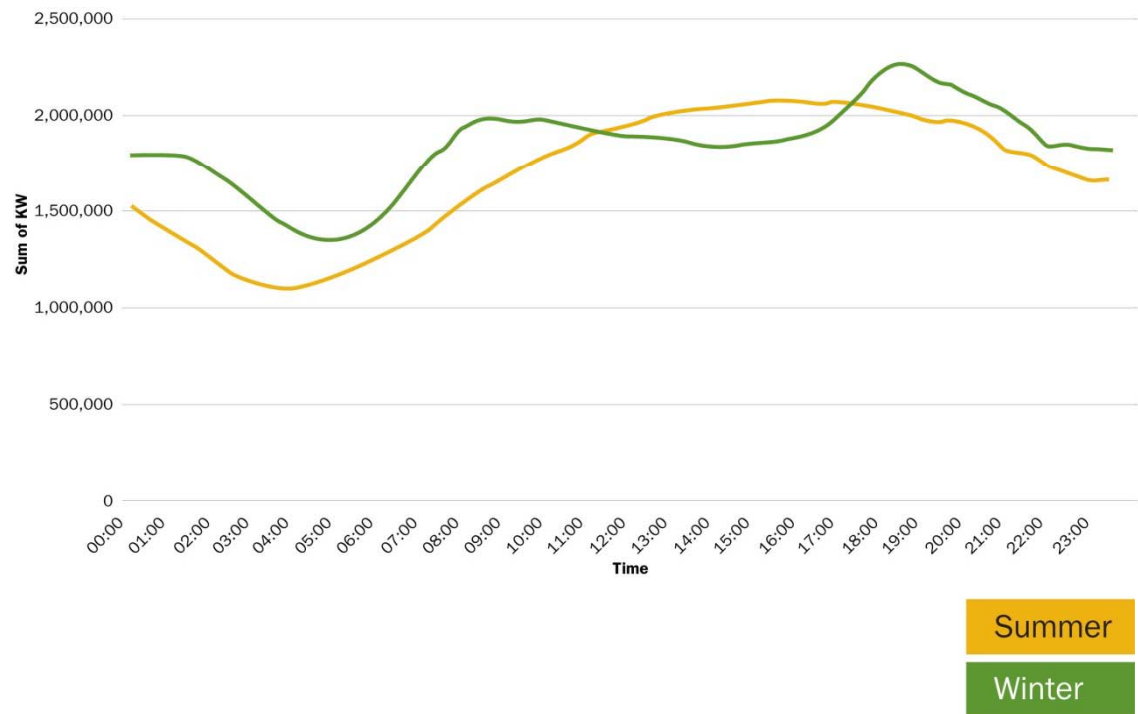


Summer peak vs winter peak



- Almost 50 per cent of Country Energy's zone substations are now summer peaking compared to 34.3 per cent in 2000-01
- Onerous effect of summer demand peaks
 - Lower equipment ratings at higher ambient temperatures
 - Longer duration peaks

Comparison between the system-wide load curve for peak summer day with peak winter day



New assets and upgrades

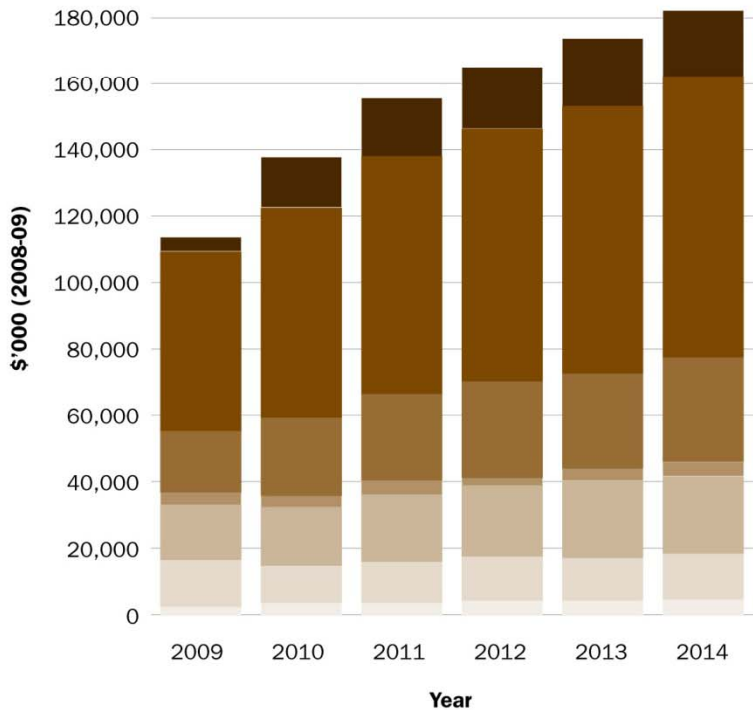
Programs



- Construction of ~ 600 km of new sub-transmission lines supplying substation loads > 15 MVA that do not currently provide N-1 security
- Augmentation of ~ 1,000 km of sub-transmission lines with constraints
- Construction of approx 400 km of sub-transmission lines to connect new assets
- 28 new or augmentation zone and sub-transmission substation projects in order to
 - Provide an N-1 level of security for loads > 15 MVA or
 - Where peak demand > firm capacity of the installed transformers

Renewal and compliance

Renewal Categories



Sub transmission lines and cables

Distribution lines and cables

Substations

Communications

Transformers

Easements

Customer metering and load control

Low voltage lines and cables

Land

Renewal – drivers and methodology



Main drivers that influence the renewal programs include:

- Physical condition
 - principle driver for Country Energy's expenditure forecasts
 - often a good correlation with asset age
- Systemic 'type' faults
- Operational safety issues
- Exceeding acceptable safety factors
- Environmental, infrastructure security
- Availability of spares



Condition based strategy

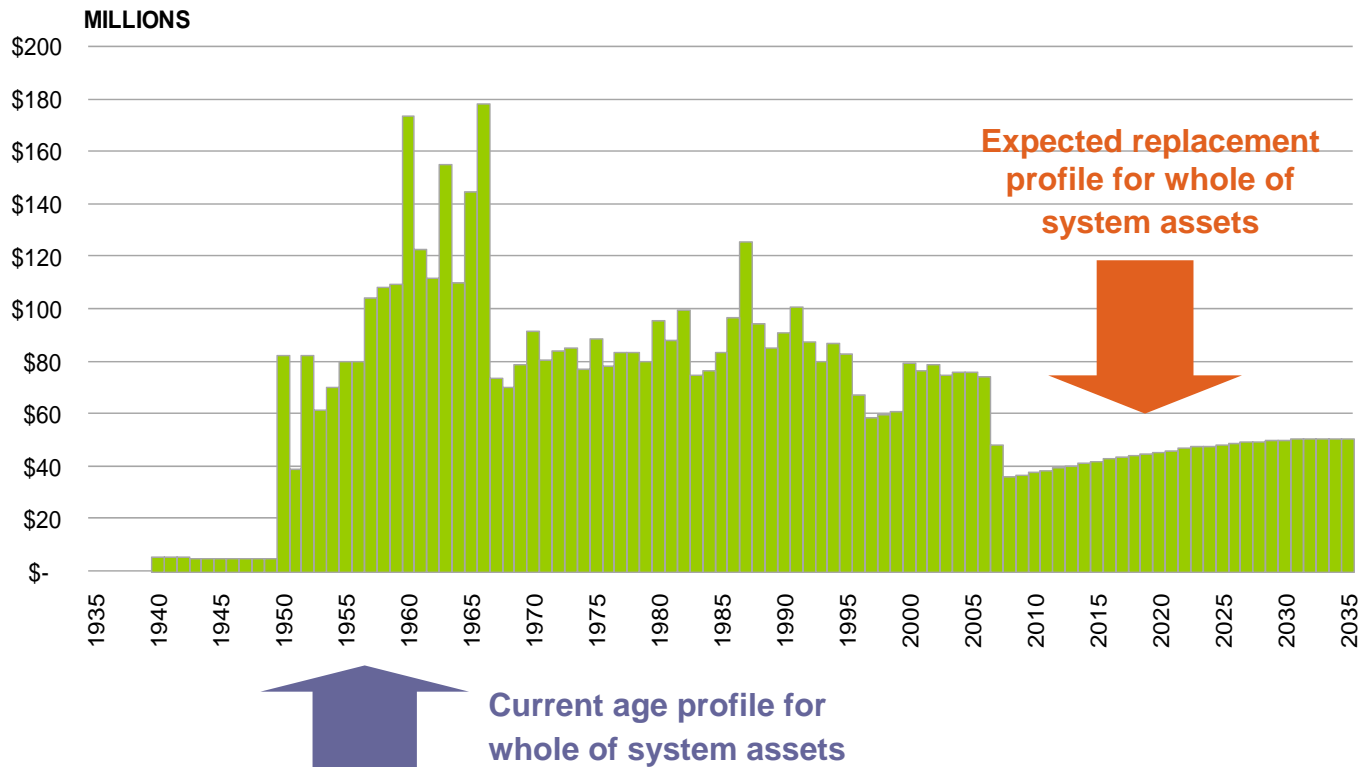


- Country Energy does not implement programs for targeted bulk replacement of system assets reaching the end of their expected lives
- Instead, our approach is based on combination of
 - condition based assessments, particularly for power transformers, major substation equipment and distribution assets
 - implementation of specific long-term asset renewal initiatives
 - safe operation
 - examination of statistical failure based replacement

Weibull model



Asset renewal programs are resulting in an annual expenditure of around 1 per cent of total asset replacement cost



- Weibull predicted rate for whole of network assets averages approx \$154M per year to 2013-14
- For comparison, a purely age based renewal program would require ~\$280M per year

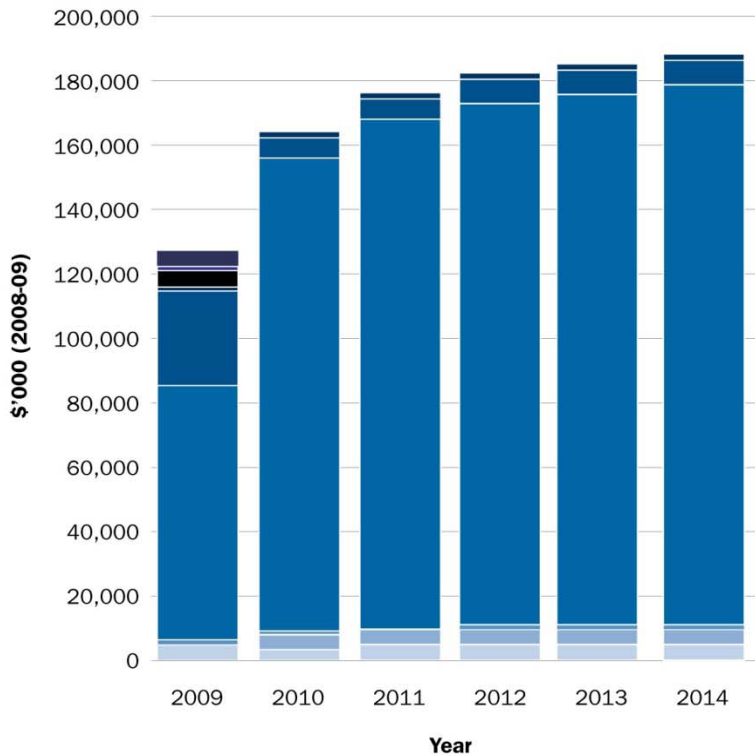
Renewal Programs



- Replacement and refurbishment of
 - more than 130 power transformers
 - switchboards and circuit breakers
 - instrument transformers, substation batteries, surge diverters, earthing systems, and protection relays that represent the greatest risk
- Gradual replacement of deteriorating subtransmission lines
 - Many greater than 50 years old
- Long term replacement program for
 - HV distribution overhead lines (steel and copper)
 - HV air-break switches with fully enclosed SF6 switchgear
 - HV porcelain fuses and links with polymer fuses and links
 - overhead service cables
 - Customer metering and load control

Reliability

Reliability Categories



Easements

Land

Communications

Low voltage lines and cables

Substations

Distribution lines and cables

Customer metering and load control

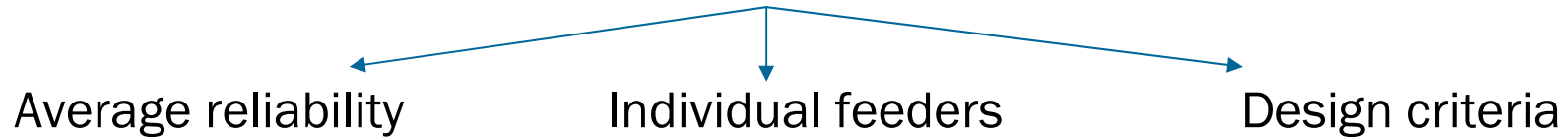
Transformers

Sub transmission lines and cables

Licence Conditions



NSW Design, Reliability and Performance Licence Conditions



SAIDI Feeder type	2005-06	2006-07	2007-08	2008-09	2009-10	From 2010-11
Urban	140	137	134	131	128	125
Short-rural	340	332	324	316	308	300
Long-rural	750	740	730	720	710	700

SAIFI Feeder type	2005-06	2006-07	2007-08	2008-09	2009-10	From 2010-11
Urban	2.00	1.96	1.92	1.88	1.84	1.80
Short-rural	3.30	3.24	3.18	3.12	3.06	3.00
Long-rural	5.00	4.90	4.80	4.70	4.60	4.50

Feeder type	Mins per customer
Urban	400
Short-rural	1000
Long-rural	1400

Feeder type	Number per customer
Urban	6
Short-rural	8
Long-rural	10

Network Element	Load Type	Forecast Demand or Expected Demand	Security Standard	Customer Interruption Time
Distribution Feeder	Urban (regional centres)	Any	N-1	< 4 hours
	Urban (other than regional centres)	Any	N	Best practice repair time
	Non-Urban	Any	N	Best practice repair time
Distribution Substation	Urban & Non-urban	Any	N	Best practice repair time

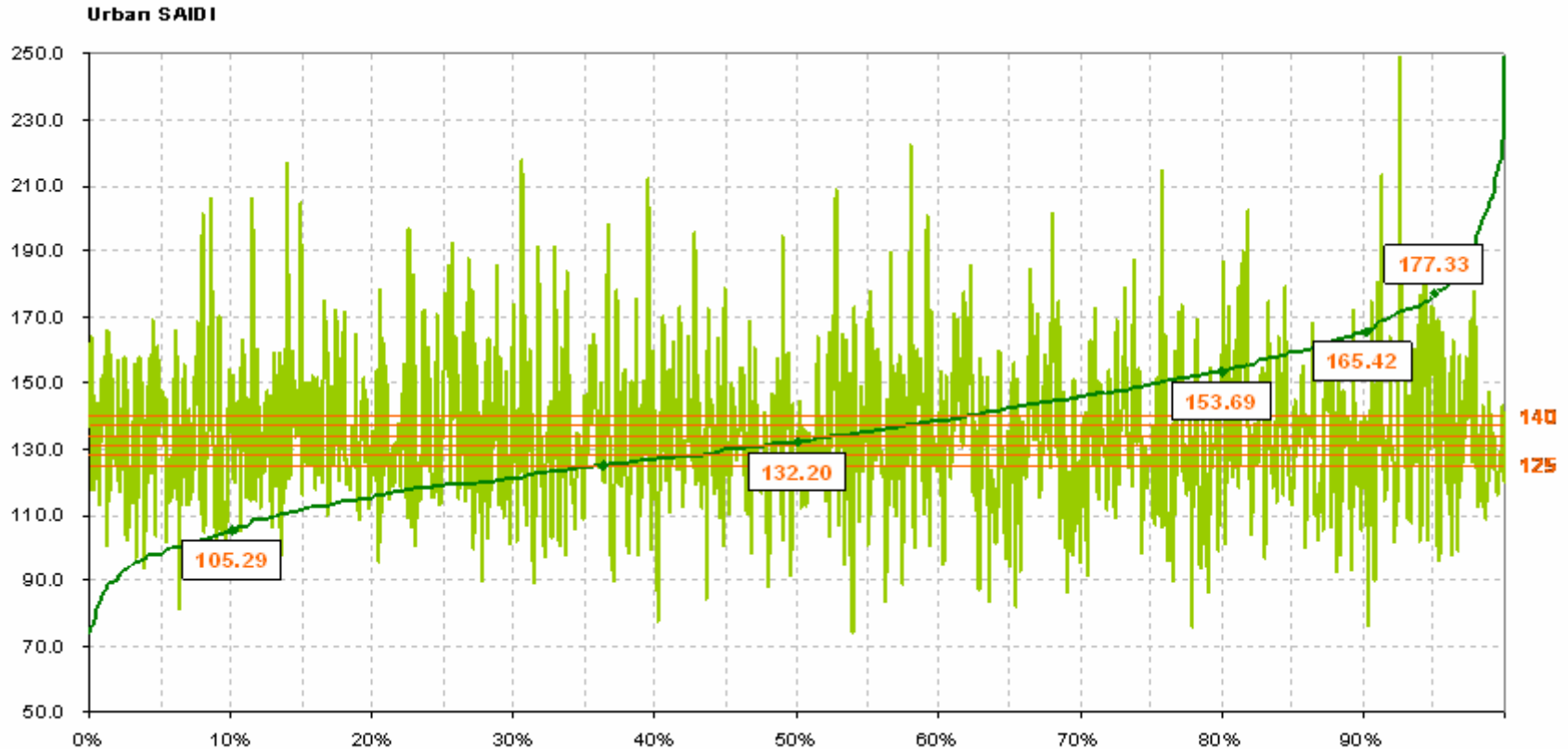
Average reliability performance



Average minimum reliability standards for each feeder type		2002-03 Actuals	2003-04 Actuals	2004-05 Actuals	2005-06 Actuals	2006-07 Actuals	Licence conditions from 2010-11
SAIDI	Urban	163	124	158	109	114	125
	Short-rural	338	293	276	317	239	300
	Long-rural	418	373	625	578	497	700
	Overall	306	262	299	304	242	
SAIFI	Urban	1.90	1.90	2.30	1.28	1.36	1.80
	Short-rural	3.02	2.86	2.51	2.71	2.47	3.00
	Long-rural	3.21	3.18	4.88	4.06	3.82	4.50
	Overall	2.77	2.67	2.82	2.55	2.39	

Fully compliant with SAIDI and SAIFI standards only once in the last five years

Probability distribution for urban SAIDI



33 per cent chance of meeting the urban SAIDI target (or 67 per cent PoE) in the absence of targeted expenditure on feeder reliability

Reliability gap



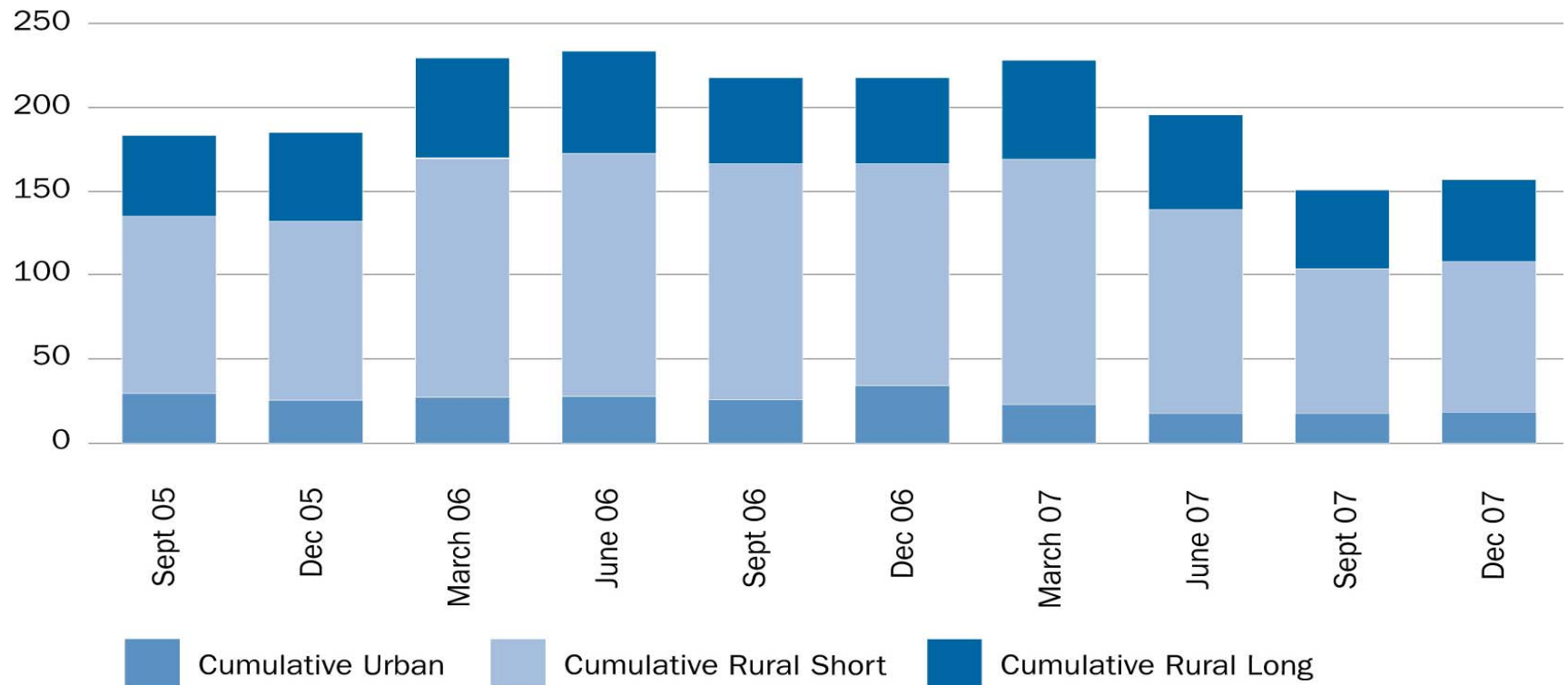
Feeder category		Current performance	Reliability target	Adjusted target	Reliability gap for 20%
SAIDI (minutes)	Urban	133	125	108	20 mins
	Short-rural	305	300	276	25 mins
	Long-rural	533	700	635	0
SAIFI (interruptions)	Urban	1.80	1.80	1.62	0.18
	Short-rural	2.83	3.00	2.83	0
	Long-rural	4.12	4.50	4.22	0

Reliability performance gaps for 20 per cent PoE for each feeder category
(including performance adjustment for other reliability programs)

Recent reliability performance for individual feeders



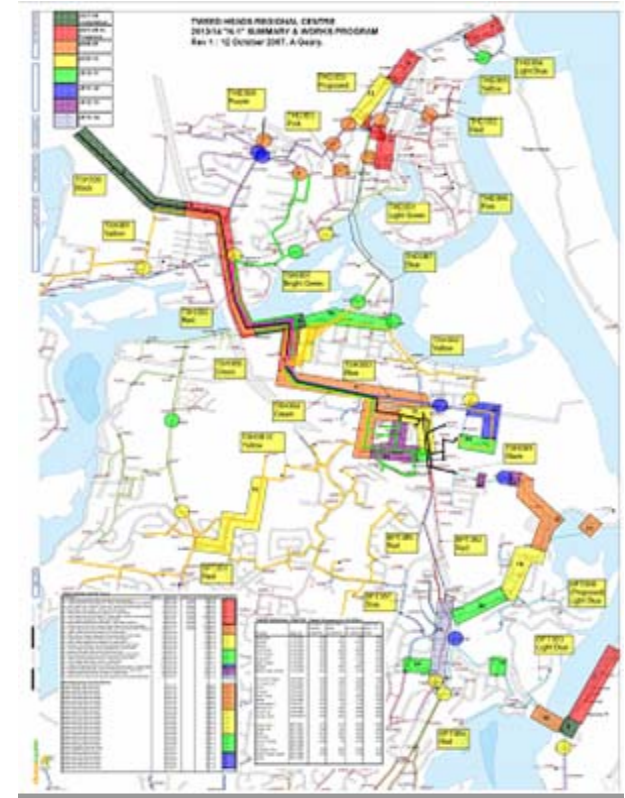
Number of distribution feeders exceeding Licence Condition standards –
September 2005 to December 2007



Design planning criteria



- Regional centre plans developed by
 - Reviewing the existing network
 - Identifying gaps in meeting N-1
 - Scoping projects



Reliability Programs



- Average reliability improvement program
 - Number of sectionalising circuit reclosers required to increase the degree of network segmentation to improve reliability
 - Will nearly double the number of reclosers installed on our network to 6,000 by 2014
- Individual feeder reliability improvement program
 - Analysis of current performance, state of rural network, and underlying causes of supply interruptions
 - 110 feeder segments
 - A suite of initiatives based on causes
- Urban distribution network N-1 reinforcement program
 - Forecast using 'bottom up' approach
 - Individual projects identified, scoped and costed

Inspection and Maintenance

Inspection and maintenance



- Our Asset Maintenance Management Plan includes two major work streams



- Asset inspection and maintenance strategies, based on condition assessment
 - Zone substation inspection, condition monitoring, diagnostic testing, maintenance
 - Pole and line inspection and maintenance
 - Distribution substation, switchgear and other equipment inspection and maintenance
 - System earthing testing and maintenance
- Vegetation management strategies

Inspection and maintenance



- Management of:
 - staff and public safety
 - bushfire
 - preservation of asset lives
 - reliability
 - under performing assets
 - service objectives and compliance obligations
 - avoiding increased unplanned corrective maintenance at much higher cost

Condition assessment



- The majority of Country Energy's inspection and maintenance programs are based on condition assessment
- Condition based programs involve undertaking
 - cyclic inspection and measurements, eg pole inspection
 - analysis of parameters, eg transformer oil analysis
- Preventative maintenance on a fixed time basis
- Even time based programs involve assessment of condition, eg vegetation clearing



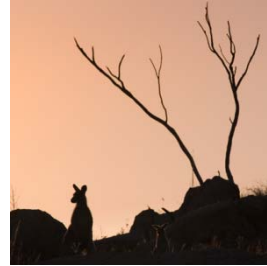
Vegetation management



- Country Energy's undertakes extensive vegetation management to
 - manage the risk of causing a bush fire
 - manage the risk to public safety
 - deliver both system wide and targeted reliability outcomes



Fault and emergency



Fault and emergency



- This activity includes fault and emergency repair and restoration of supply
- Generally in line with current levels of expenditure and activity levels, as Country Energy has included a ‘trade-off’ reduction in emergency response expenditure
- Reflects the expected effectiveness of planned capital and operating expenditure for reliability improvement



Support Services

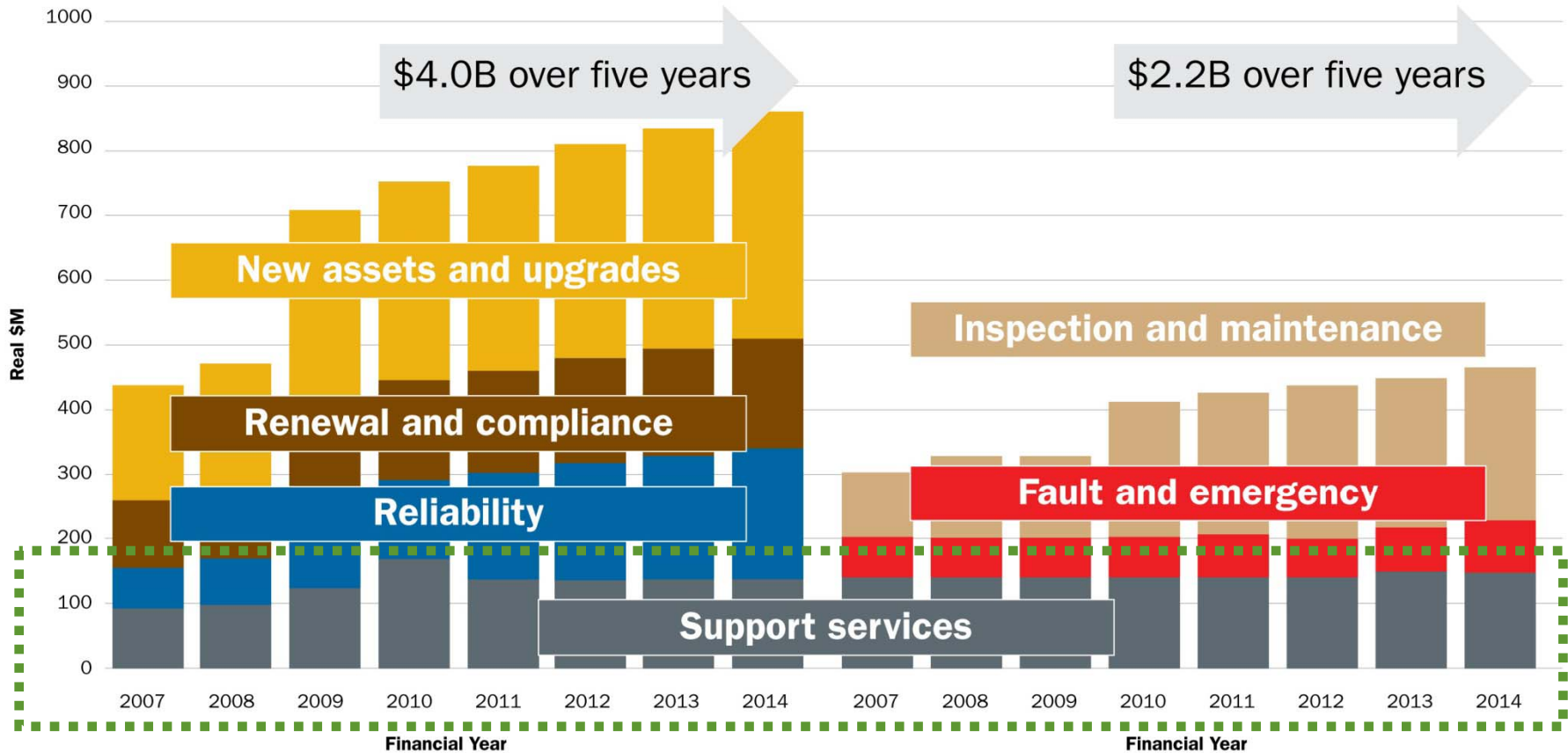
Bill Frewen, Group General Manager External Relations

Overall expenditure forecast



Capital expenditure

Operating expenditure





Country Energy's fleet

- ~ 2,000 Heavy vehicles
- ~ 2,100 Light vehicles (includes trailers)
- ~ \$120M Estimated capital value
- ~ 64Mkm Work travel per year
- ~ 10Mlt Fuel consumption 2008-09
- ~ \$17M Fuel cost for 2008-09

Our network terrain and climate requires reliable off-road vehicles

Our fleet renewal program is based on an increasing work load, additional employees, safety and efficiency

- EWP and Crane Borer Replacement Program
 - Improved safety compliance
 - Improved operational efficiency
- Replacement of existing light fleet based on life cycle of 100,000 km
 - 6 to 4 cylinder vehicle replacement program
 - Fleet utilisation model
 - '5 Star' vehicle rating system

Property



Country Energy's sites

142	Service Centres
330	Zone substations
334	Radio sites

Our property maintenance program is based on an increasing work load, additional employees, safety and efficiency

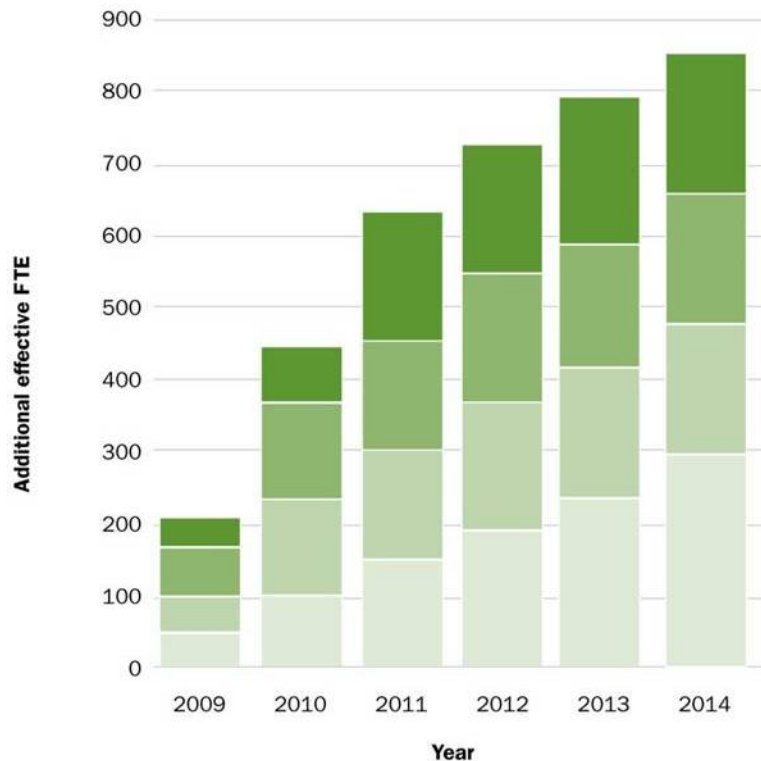
- Certain service centres are currently at, or nearing capacity
- Capital investments will be required in the form of building modifications, rebuilds and extensions
- Necessary to refurbish ageing buildings to provide a safe, efficient and secure working environment for employees

We will maintain our current, decentralised, regional presence

People



Country Energy has developed a strong *Resource and Productivity Plan* to ensure we can deliver our proposed expansion in works programs



- Plan developed in consultation with expert advisers, PB Associates
- Mix of internal and external labour
- Will make available the equivalent of an additional 830 full time employees by 2014

Productivity gain (increased output per employee)

Outsourced task or redeployed internal labour

Recruitment (qualified)

Recruitment (apprentice)

Summary



Country Energy's regulatory proposal is designed to deliver a safe and efficient electricity network service through

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